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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/956,994	09/21/2001	Mutsumi Kimura	110423	2948

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EXAMINER	
LEWIS, DAVID LEE	
ART UNIT	**PAPER NUMBER**
2673	10

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/956,994	Kimura
Examiner	**Art Unit**
David L. Lewis	2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Sep 21, 2001*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-14* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *5 & 8*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Title: Driving Method For Electro-Optical Device, Electro-Optical Device, and Electronic Apparatus

DETAILED ACTION

Response to Substitute Specification Amendment

1. The amendment filed 12/28/2001 is objected to under 35 U.S.C. 132 because it **fails to make a statement that no new matter has been added to the specification**. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention.
Applicant is required to contain a statement that no new matter has been added to the specification in the reply to this Office Action.

Claim Rejections - 35 U.S.C. § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in-
(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. **Claims 1-3 and 7-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Ozawa et al. (2002/0097213 A1).**

4. **As in claim 1, 9, and 14, Ozawa et al. teaches of** a driving method for an electro-optical device which includes, at an intersection of a scanning line and a data line, an electro-optical element, **figure 31 item 40**, a driving transistor that drives the electro-optical element, **figure 31 item 30**, and a switching transistor that controls the driving transistor, **figure 30 item 20**, the driving method comprising: a setting step of supplying a first on-signal to the switching transistor via the scanning line, **figure 16(b) item Sgate1**, and of supplying a set signal to select a conducting state or a non-conducting state of the driving transistor to the driving transistor via the data line and the switching transistor in accordance with a period for which the first on-signal is supplied, **figure 16B item sig(data1)**; and a resetting step of supplying a second on-signal to the switching transistor via the scanning line, **figure 16(b) item Sgate2**, and of supplying a reset signal to select the non-conducting state of the driving transistor to the driving transistor via the data line and the switching transistor in accordance with a period for which the second on-signal is supplied, **figure 16(b) item sig(data2)**.

5. **As in claim 10, Ozawa et al. teaches of** an electro-optical device comprising: a scanning line, **figure 31 item gate**; a data line, **figure 31 item data**; an electro-optical element at an intersection of the scanning line and the data line, **figure 31 item 40**; a driving transistor that drives the electro-optical element, **figure 31 item 30**; a switching transistor that controls the driving transistor, **figure 31 item**

7; a drive circuit that generates a signal to set the switching transistor to be an on-state or an off-state, and that generates a signal to set or reset the driving transistor in accordance with the signal to set the switching transistor to be the on-state or the off-state, **figure 31 item 4**.

6. **As in claim 11, Ozawa et al. teaches of** an electro-optical device, comprising: a scanning line, **figure 31 item gate** ; a data line, **figure 31 item data**; an electro-optical element at an intersection at the scanning line and the data line, **figure 31 item 40**; a driving transistor that drives the electro-optical element, **figure 31 item 30**; a switching transistor that controls the driving transistor, **figure 31 item 7**; a scanning line driver that supplies a signal to set the switching transistor to be an on-state or an off-state to the scanning line, **figure 31 item 4**; and a data line driver that supplies a signal to set or reset the driving transistor to the data line in accordance with an operation of the scanning line driver, **figure 31 item 3**.

7. **As in claim 12, Ozawa et al. teaches of** an electro-optical device, comprising: a scanning line, **figure 31 item gate** ; a data line, **figure 31 item data**; an electro-optical element at an intersection of the scanning line and the data line, **figure 31 item 40**; a driving transistor that drives the electro-optical element, **figure 31 item 30**; and a switching transistor that controls the driving transistor, **figure 31 item 7**, an on-signal to perform a setting step of setting the electro-optical

element, **figure 16(b) item Sgate and data,** and a resetting step of resetting the electro-optical element being supplied to the switching transistor via the scanning line, **figure 16(b) item Sgate and data**.

8. **As in claim 2, Ozawa et al. teaches of**, further including a horizontal scanning period that includes a first sub horizontal scanning period to perform the setting step and a second sub horizontal scanning period to perform the resetting step, figure 16(b) Sgate1 and Sgate2. **As in claim 3, Ozawa et al. teaches of**, further including performing the setting step in a first horizontal scanning period, and performing the resetting step in a second horizontal scanning period, figure 16(b) Sgate1 and Sgate2. **As in claim 7, Ozawa et al. teaches of**, further including providing the set signal to be a signal for setting the conducting state for the driving transistor rather than the signal for selecting the conducting state or the non-conducting state of the driving transistor, figure 16(b) Sgate1 and Sgate2. **As in claim 8 and 13, Ozawa et al. teaches of**, further including driving the electro-optical element including an organic electroluminescence element, figure 31 item 40.

Claim Rejections - 35 U.S.C. § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. **Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al. (2002/0097213 A1).**

11. **As in claim 4, 5, and 6, Ozawa et al. is silent as to teaching**, further including obtaining a gray-scale by performing a plurality of set-reset operations, each set-reset operation including the setting step and the resetting step, **Ozawa et al. is silent as to teaching**, further including providing a time interval between the setting step and the resetting step that is different for each of the plurality of set-reset operations, **Ozawa et al. is silent as to teaching**, further including providing the time interval between the setting step and the resetting step for each of the plurality of set-reset operations to be completely different from each other, and the ratio of time intervals for the plurality of set-reset operations being set to be about 1:2: .. :2n (n is an integer of one or more) based on the minimum time interval. However said grayscale as found in claim 4, and said time intervals as found in claims 5 and 6, would have been obvious to the skilled artisan in view of the structure taught by Ozawa and the known useful need for providing grayscale as taught by Yamazaki. Yamazaki teaches of providing gray scale, column 7 lines 42-57, wherein Yamazaki's drive method also includes sub horizontal scanning, and varied time intervals between the setting and resetting steps, figure 8 items

D1-8. **Wherein it would have been obvious** to the skilled artisan at the time of the invention to provide for a gray scale driving means as taught by Yamazaki for the display structure as found in Ozawa, having varied time intervals, because the gray scale driving method is a well known and useful means for providing images and a display devices of the type suggested by both Ozawa and Yamazaki, and Yamazaki suggests a sub horizontal scanning and varied time intervals in such a display, as found in claims 4-6.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 5844535, 5627560, 6522319, 2002/0109659, 2001/0035849, 6528951, 5926160, 5543947, 5903248, 6380688.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(703) 306-3026**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on (703) 305-4938. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

BIPIN SHALWALA
SUPERVISORY PATENT E
TECHNOLOGY CENT